

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently Amended) A method for managing bandwidth within a distributed data processing system, the method comprising:

establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application; [[and]]

in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;

deriving a set of logical routes from a network topology mapping, wherein each logical route is a series of endpoints that comprise an endpoint-to-endpoint route for completing the requested action;

in response to a request by the administrative user, dynamically deploying packet snooter objects in association with a packet filter object along the set of logical routes throughout the distributed data processing system, wherein the packet filter object specifies packet types or packet sizes to be snooped;

executing the dynamically deployed packet snooter objects at devices along the set of logical routes to monitor bandwidth usage; and

receiving bandwidth usage data from the dynamically deployed packet snooter objects.

2 (Currently Amended) ~~The method of claim 1 further comprising:~~ A method for managing bandwidth within a distributed data processing system, the method comprising:

establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;

selecting, by an administrative user, a user to be monitored for bandwidth usage;

generating a packet filter object containing a packet filtering parameter that identifies the selected user;

in response to a request by the administrative user, dynamically deploying packet snooter objects in association with the packet filter object to a set of devices throughout the distributed data processing system;

executing the dynamically deployed packet snooper objects at the set of devices to monitor bandwidth usage by the selected user with respect to a given device or a given subnet; and receiving bandwidth usage data from the dynamically deployed packet snooper objects.

3. (Currently Amended) ~~The method of claim 1 further comprising:~~ A method for managing bandwidth within a distributed data processing system, the method comprising:

establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;

selecting, by an administrative user, an application to be monitored for bandwidth usage;  
generating a packet filter object containing a packet filtering parameter that identifies the selected application;

in response to a request by the administrative user, dynamically deploying packet snooper objects in association with the packet filter object to a set of devices throughout the distributed data processing system;

executing the dynamically deployed packet snooper objects at the set of devices to monitor bandwidth usage by the selected application with respect to a given device or a given subnet; and receiving bandwidth usage data from the dynamically deployed packet snooper objects.

4. (Currently Amended) The method of claim 1 further comprising:

snooping network packets from multiple sources within the distributed data processing system;  
filtering the network packets against multiple filter parameters, wherein a filter parameter comprises a user identifier, an application identifier, an endpoint identifier; [[and]]

reporting packet snoop data to be associated with the requesting entity;

computing bandwidth usage data from the packet snoop data; and

storing the bandwidth usage data as the bandwidth history.

5. (Previously Presented) The method of claim 2 further comprising:

inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.

6. (Previously Presented) The method of claim 2 further comprising:  
inserting a packet filtering parameter in the packet filter object that specifies a packet size to be snooped.
7. (Cancelled)
8. (Previously Presented) The method of claim 3 further comprising:  
inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.
9. (Previously Presented) The method of claim 3 further comprising:  
inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.
10. (Original) The method of claim 1 further comprising:  
displaying the predicted bandwidth usage for the requested action to the system administrator.
11. (Original) The method of claim 1 further comprising:  
querying the bandwidth history by the application that generated the requested action.
12. (Currently Amended) ~~The method of claim 1 further comprising:~~ A method for managing bandwidth within a distributed data processing system, the method comprising:  
establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;  
in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;  
comparing actual bandwidth usage with predicted bandwidth usage;  
determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and  
modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to multiple instances of the application that generated the requested action.

13. (Currently Amended) ~~The method of claim 1 further comprising:~~ A method for managing bandwidth within a distributed data processing system, the method comprising:  
establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;  
in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;  
comparing actual bandwidth usage with predicted bandwidth usage;  
determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and  
modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to the application that generated the requested action.

14-15. (Cancelled)

16. (Currently Amended) A method for managing bandwidth within a distributed data processing system, the method comprising:  
establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is selected from a group comprising a user, an application, or an endpoint;  
in response to a requested action within the distributed data processing system, predicting bandwidth usage by the requested action;  
comparing actual bandwidth usage with predicted bandwidth usage;  
querying the bandwidth history by the application that generated the requested action;  
determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; ~~[[and]]~~  
modifying the requested action to reduce bandwidth consumption during completion of the requested action; and  
changing the requested action in comparison to actual bandwidth usage with respect to multiple instances of the application that generated the requested action.

17. (Currently Amended) An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:

means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application; [[and]]

means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

means for selecting, by an administrative user, a user to be monitored for bandwidth usage;

means for generating a packet filter object containing a packet filtering parameter that identifies the selected user;

means for dynamically deploying, in response to a request by the administrative user, packet snooper objects in association with the packet filter object to a set of devices throughout the distributed data processing system;

means for executing the dynamically deployed packet snooper objects at the set of devices to monitor bandwidth usage by the selected user with respect to a given device or a given subnet; and

means for receiving bandwidth usage data from the dynamically deployed packet snooper objects.

18. (Cancelled)

19. (Currently Amended) ~~The apparatus of claim 17 further comprising:~~ An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:

means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

means for selecting, by an administrative user, an application to be monitored for bandwidth usage;

means for generating a packet filter object containing a packet filtering parameter that identifies the selected application;

means for dynamically deploying, in response to a request by the administrative user, packet snooper objects in association with the packet filter object to a set of devices throughout the distributed data processing system;

means for executing the dynamically deployed packet snooper objects at the set of devices to monitor bandwidth usage by the selected application with respect to a given device or a given subnet; and

means for receiving bandwidth usage data from the dynamically deployed packet snooper objects.

20. (Currently Amended) The apparatus of claim 17 further comprising:  
means for snooping network packets from multiple sources within the distributed data processing system;  
means for filtering the network packets against multiple filter parameters, wherein a filter parameter comprises a user identifier, an application identifier, or an endpoint identifier;  
means for reporting packet snoop data to be associated with the requesting entity;  
means for computing bandwidth usage data from the packet snoop data; and  
means for the storing bandwidth usage data as the bandwidth history.
21. (Currently Amended) The apparatus of claim [[18]] 17 further comprising:  
means for inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.
22. (Currently Amended) The apparatus of claim [[18]] 17 further comprising:  
means for inserting a packet filtering parameter in the packet filter object that specifies a packet size to be snooped.
23. (Currently Amended) ~~The apparatus of claim 17 further comprising:~~ An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:  
means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;  
means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;  
means for deriving a set of logical routes from a network topology mapping, wherein each logical route is a series of endpoints that comprise an endpoint-to-endpoint route for completing the requested action;  
means for dynamically deploying, in response to a request by the administrative user, packet snooper objects in association with a packet filter object along the set of logical routes throughout the distributed data processing system, wherein the packet filter object specifies packet types or packet sizes to be snooped;  
means for executing the dynamically deployed packet snooper objects at devices along the set of logical routes to monitor bandwidth usage; and  
means for receiving bandwidth usage data from the dynamically deployed packet snooper objects.

24. (Previously Presented) The apparatus of claim 19 further comprising:  
means for inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.
25. (Previously Presented) The apparatus of claim 19 further comprising:  
means for inserting a packet filtering parameter in the packet filter object that specifies a packet size to be snooped.
26. (Original) The apparatus of claim 17 further comprising:  
means for displaying the predicted bandwidth usage for the requested action to the system administrator.
27. (Original) The apparatus of claim 17 further comprising:  
means for querying the bandwidth history by the application that generated the requested action.
28. (Currently Amended) ~~The apparatus of claim 17 further comprising:~~ An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:  
means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;  
means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;  
means for comparing actual bandwidth usage with predicted bandwidth usage;  
means for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and  
means for modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to multiple instances of the application that generated the requested action.
- 29-30. (Cancelled)
31. (Currently Amended) ~~The apparatus of claim 17 further comprising:~~ An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:

means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

means for comparing actual bandwidth usage with predicted bandwidth usage;

means for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and

means for modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to an endpoint supporting the application that generated the requested action.

32. (Currently Amended) An apparatus for managing bandwidth within a distributed data processing system, the apparatus comprising:

means for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is selected from a group comprising a user, an application, or an endpoint;

means for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

means for querying the bandwidth history by the application that generated the requested action;

means for comparing actual bandwidth usage with predicted bandwidth usage;

means for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; [[and]]

means for modifying the requested action to reduce bandwidth consumption during completion of the requested action; and

means for changing the requested action in comparison to actual bandwidth usage with respect to multiple instances of the application that generated the requested action.

33. (Currently Amended) A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;



instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

instructions for selecting, by an administrative user, an application to be monitored for bandwidth usage;

instructions for generating a packet filter object containing a packet filtering parameter that identifies the selected application;

instructions for dynamically deploying, in response to a request by the administrative user, packet snoopers in association with the packet filter object to a set of devices throughout the distributed data processing system;

instructions for executing the dynamically deployed packet snoopers at the set of devices to monitor bandwidth usage by the selected application with respect to a given device or a given subnet;  
and

instructions for receiving bandwidth usage data from the dynamically deployed packet snoopers.

34. (Currently Amended) ~~The computer program product of claim 33 further comprising:~~ A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

instructions for selecting, by an administrative user, a user to be monitored for bandwidth usage;

instructions for generating a packet filter object containing a packet filtering parameter that identifies the selected user;

instructions for dynamically deploying, in response to a request by the administrative user, packet snoopers in association with the packet filter object to a set of devices throughout the distributed data processing system;

instructions for executing the dynamically deployed packet snoopers at the set of devices to monitor bandwidth usage by the selected user with respect to a given device or a given subnet; and

instructions for receiving bandwidth usage data from the dynamically deployed packet snoopers.

35. (Cancelled)
36. (Currently Amended) The computer program product of claim 33 further comprising:  
instructions for snooping network packets from multiple sources within the distributed data processing system;  
instructions for filtering the network packets against multiple filter parameters, wherein a filter parameter comprises a user identifier, an application identifier, or an endpoint identifier;  
instructions for reporting packet snoop data to be associated with the requesting entity;  
instructions for computing bandwidth usage data from the packet snoop data; and  
instructions for the storing bandwidth usage data as the bandwidth history.
37. (Previously Presented) The computer program product of claim 34 further comprising:  
instructions for inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.
38. (Previously Presented) The computer program product of claim 34 further comprising:  
instructions for inserting a packet filtering parameter in the packet filter object that specifies a packet size to be snooped.
39. (Currently Amended) ~~The computer program product of claim 33 further comprising:~~ A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:  
instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;  
instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;  
instructions for deriving a set of logical routes from a network topology mapping, wherein each logical route is a series of endpoints that comprise an endpoint-to-endpoint route for completing the requested action;  
instructions for dynamically deploying, in response to a request by the administrative user, packet snoopers in association with a packet filter object along the set of logical routes throughout the distributed data processing system, wherein the packet filter object specifies packet types or packet sizes to be snooped;

instructions for executing the dynamically deployed packet snoopers at devices along the set of logical routes to monitor bandwidth usage; and

instructions for receiving bandwidth usage data from the dynamically deployed packet snoopers.

40. (Currently Amended) The computer program product of claim [[35]] 33 further comprising:  
instructions for inserting a packet filtering parameter in the packet filter object that specifies a packet type to be snooped.

41. (Currently Amended) The computer program product of claim [[35]] 33 further comprising:  
instructions for inserting a packet filtering parameter in the packet filter object that specifies a packet size to be snooped.

42. (Original) The computer program product of claim 33 further comprising:  
instructions for displaying the predicted bandwidth usage for the requested action to the system administrator.

43. (Original) The computer program product of claim 33 further comprising:  
instructions for querying the bandwidth history by the application that generated the requested action.

44. (Currently Amended) ~~The computer program product of claim 33 further comprising:~~ A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

instructions for comparing actual bandwidth usage with predicted bandwidth usage;

instructions for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and

instructions for modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to multiple instances of the application that generated the requested action.

45. (Currently Amended) ~~The computer program product of claim 33 further comprising:~~ A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

instructions for comparing actual bandwidth usage with predicted bandwidth usage;

instructions for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and

instructions for modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to the application that generated the requested action.

46. (Cancelled)

47. (Currently Amended) ~~The computer program product of claim 33 further comprising:~~ A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is a user or an application;

instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;

instructions for comparing actual bandwidth usage with predicted bandwidth usage;

instructions for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; and

instructions for modifying the requested action to reduce bandwidth consumption during completion of the requested action with respect to an endpoint supporting the application that generated the requested action.

48. (Currently Amended) A computer program product in a computer-readable medium for use in a distributed data processing system for managing bandwidth, the computer program product comprising:

- instructions for establishing a bandwidth history comprising bandwidth usage data associated with multiple entities within the distributed data processing system, wherein an entity within the distributed data processing system is selected from a group comprising a user, an application, or an endpoint;
- instructions for predicting bandwidth usage by the requested action in response to a requested action within the distributed data processing system;
- instructions for querying the bandwidth history by the application that generated the requested action;
- instructions for comparing actual bandwidth usage with predicted bandwidth usage;
- instructions for determining whether to adapt the requested action in response to comparing actual bandwidth usage with predicted bandwidth usage; [[and]]
- instructions for modifying the requested action to reduce bandwidth consumption during completion of the requested action; and
- instructions for changing the requested action in comparison to actual bandwidth usage with respect to multiple instances of the application that generated the requested action.